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MANPOWER FOR CALIFORNIA HOSPITALS, 1964-1975.
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AN EXAMINATION OF THE HOSPITAL AND NURSING AND CONVALESCENT HOME INDUSTRY IN 1964 AND EMPLOYMENT PROJECTIONS ARE PRESENTED AS AN INITIAL CONTRIBUTION TO THE DEVELOPMENT OF AN ONGOING MANPOWER INFORMATION PROGRAM IN THE STATE. DATA WERE COMPILED FROM POPULATION PROJECTIONS BY THE CALIFORNIA DEPARTMENT OF FINANCE, WAGE SURVEY STUDIES BY THE DEPARTMENT OF INDUSTRIAL RELATIONS AND INFORMATION ABOUT THE NUMBER OF AVAILABLE HOSPITAL BEDS AND EMPLOYMENT FROM STATE DEPARTMENTS, FEDERAL AGENCIES, AND NONGOVERNMENTAL ORGANIZATIONS AND INDIVIDUALS. DATA WERE COMBINED INTO AN APPROXIMATE MODEL OF THE INDUSTRY IN 1964 WHICH WAS THEN USED AS THE BENCHMARK FOR PROJECTIONS FOR 1965, 1967, 1970, AND 1975. IN ADDITION TO AN AGGREGATE EMPLOYMENT OUTLOOK, THE OUTLOOK FOR THE SPECIFIC OCCUPATIONS OF THE REGISTERED NURSE, LICENSED VOCATIONAL NURSE, PSYCHIATRIC TECHNICIAN, NURSE AIDE, ORDERLY, WARD MAID, WARD CLERK, HOSPITAL ADMINISTRATOR, MEDICAL TECHNICIAN, MEDICAL RECORDS CLERK, AND INSURANCE CLERK IS PRESENTED IN TERMS OF DEFINITION, JOB PREPARATION AND FUTURE PROSPECTS. TABLES INCLUDE ESTIMATES OF TOTAL POPULATION AND EMPLOYMENT AND BED DATA AND PROJECTIONS BY TYPE OF AGENCY, DEPARTMENT WITHIN AGENCY, TYPE OF OWNERSHIP, OCCUPATION, AND SELECTED GEOGRAPHICAL AREAS. (JK)

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State of California
Edmund G. Brown, Governor
Employment Relations Agency
Albert B. Tieburg, Administrator

MANPOWER FOR
CALIFORNIA HOSPITALS
1964–1975

A Report Prepared for the
Commission on Manpower, Automation and Technology

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MAT Report No. 65-6

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h and Statistics Section
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December 1965

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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MANPOWER FOR CALIFORNIA HOSPITALS

1964-1975

A Report Prepared for the

COMMISSION ON MANPOWER, AUTOMATION, AND TECHNOLOGY

by

State of California
Department of Employment
Research and Statistics Section
Sacramento, California
December 1965

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This study was prepared by the Department of Employment with the cooperation and assistance of a number of other State Departments, whose willingness to provide information and assistance is greatly appreciated. We are under particular obligation to acknowledge help by the California Departments of Public Health, Mental Hygiene, Industrial Relations, and Finance. Thanks are also expressed to Mark Blumberg, M.D., of Stanford Research Institute and Herman Sturm of the Bureau of Labor Statistics, U.S. Department of Labor.

Also appreciated is the willingness of the California Medical Association, the California Hospital Association, and the California Nursing Association to review the draft of this report prior to its release. While we acknowledge the assistance received in making this study, we accept responsibility for all judgments reflected in the report, which are necessarily those of this Department.

Actual conduct of this study was by staff of the Research and Statistics Section, but it must be noted that Department of Employment staff in the Coastal, Los Angeles Metropolitan, and Southern Areas have previously made extensive studies of the manpower situation of hospitals in the areas they serve, and these earlier works were used extensively in the present study.

ALBERT B. TIEBURG, DIRECTOR

PREFACE

The California Commission on Manpower, Automation and Technology requested the Department of Employment to prepare this report as a part of its plan for developing an on-going manpower-information program in the State. As the plan is implemented this report will be seen as an initial contribution to the manpower-information program. This pilot project also had objectives concerned with identification of problems in projecting manpower requirements of a single industry.

The basic study was conducted by the Research and Statistics Section of the Department of Employment and was an interdepartmental undertaking. The study makes use of research and projections by a number of State Departments, and in this sense, reflects the combined abilities of many State agencies. It rests on population projections prepared by the California Department of Finance, and on studies and projections of hospital bed requirements by the State Departments of Public Health, Mental Hygiene, Corrections, and Youth Authority; and a number of Federal agencies (including the Department of Defense and the Veterans Administration). Additional information concerning hospitals was available from wage survey studies which had been completed by the Department of Industrial Relations. The basic analysis of manpower requirements and skills was prepared by the Department of Employment. Assistance was received from a number of non-governmental organizations and from individuals who are specialists in particular aspects of hospital administration.

In using the data set forth in this report it is well to remember that the manpower requirements of a single industry are being projected. Manpower requirements for the individual occupations mentioned in the report may be considerably greater than indicated in those cases where the occupations are also employed in other industries.

The Commission in accepting this report expresses its particular thanks to the Department of Employment and to the other cooperating state departments and agencies.

Berkeley, December 1965

Louis E. Davis
Chairman, Research Committee
Commission on Manpower, Automation
and Technology

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INTRODUCTION

The California Department of Employment, at the request of the California Commission on Manpower, Automation and Technology, has prepared this study of the manpower requirements of California Hospitals and Nursing and Convalescent Homes in the years 1964, 1965, 1967, 1970, and 1975.

Scope of the Study

The study covers hospitals and nursing and convalescent homes. Excluded from consideration here are the offices of physicians and dentists in private practice, and private medical and dental laboratories which are not an integral part of a hospital. Also excluded are facilities such as rest homes which provide residential rather than primarily nursing services.

Methods Used

Data on the number of beds and employment in the institutions covered by the study were collected from various agencies and combined into an approximate model of the industry in 1964, which was then used as the benchmark for projections for 1965, 1967, 1970, and 1975. Each sector of the industry was analyzed independently, with the employment projections based on estimates of the number of beds to be required in future years.

The California Department of Public Health, Bureau of Hospitals provided data on the number of beds and employees in hospital establishments licensed by that Bureau. Included were all hospitals operated by cities, counties, or special hospital districts, by nonprofit and proprietory interests, and nursing and convalescent homes which provide skilled nursing care. An employment profile of general hospitals and nursing and convalescent homes by hospital department was prepared from the records of the Bureau. (See Tables 3 and 4)

The California Department of Mental Hygiene supplied current and projected data on number of beds and employment in State operated mental hospitals, and current data on the private mental institutions which the Department licenses.

The remainder of the basic data were obtained from the several State and Federal departments which provide medical care to segments of the population on a selective basis. These include the State Departments of Corrections, Youth Authority, and Veteran's Affairs, the University of California, the United States Veterans Administration, the Federal military establishments, and the United States Public Health Service.

Basic to the projections of the number of hospital beds were the population estimates for California through 1975 prepared by the California Department of Finance which constitute the official population projections for the State.

The number of beds in hospitals licensed by the Department of Public Health, Bureau of Hospitals was projected to 1975 by a regression equation using population as the independent variable.

Projections for hospitals operated by the State and Federal governments were based upon plans made by the several agencies for the period through 1975, rather than upon a regression equation, since these plans are well developed and in many cases are already fully or partially funded by the California Legislature or the United States Congress.

Assumptions Underlying Projections

Any projection into the future is really a best judgment at some given time as to the way the economy and an industry will develop, and rests on some type of assumptions as to the conditions which will prevail during the time covered by the projection. These assumptions must be stated explicitly, even when no change is expected in any major factors on which the projection depends. Explicit assumptions provide the only basis on which the reasonableness of a projection can be evaluated at the time it is made, and they are the only basis on which the projection can be reviewed and modified from time to time in the light of actual changes in any condition which is believed to affect the projection.

Assumptions used in preparing both the bed and employment estimates in this study are listed below:

1. The population of California will continue to grow according to the pattern given in estimates prepared by the Department of Finance and, more specifically, as follows for the State and for each of the five areas to which these projections relate.

Table 1--Estimates of Total Population in California
And Selected Areas
1960-1975

(thousands)

Year	California	Standard Metropolitan Statistical Areas				Inyo County [1]
		Los Angeles	Sacramento	San Diego	San Francisco	
1960	15,863.0	6,071.9	634.2	1,049.0	2,665.2	11.7
1964	18,234.0	6,737.3	748.8	1,165.8	2,959.6	12.5
1965	18,835.0	6,869.0	806.1	1,252.7	3,016.2	12.7
1967	19,995.0	7,173.7	833.6	1,314.7	3,163.9	12.8
1970	21,734.0	7,630.8	874.9	1,407.7	3,385.4	13.2
1975	24,830.0	8,430.8	1,163.2	1,593.0	3,783.0	13.7

[1] Adjusted for change in growth rate.

Source: California Department of Finance Financial and Population Research Section, California Population 1964, Sacramento, California, 1964. Also, Provisional Projections of California Areas and Counties to 1980, Sacramento, California, February 15, 1963.

2. Technological changes will continue, but the introduction of new systems and processes will not be rapid enough to change radically the patterns foreseeable for the ten years covered by the study.

3. Since a major accomplishment in the control of disease, such as the development of polio vaccine, cannot be predicted in advance no allowance should be made for possible changes of this nature which could affect the demand for medical services.

4. Contracting out hospital services to vendors will continue to grow but will be confined to ancillary services such as laundry, housekeeping and maintenance, and the dietary department.

5. Medicare became a part of the Social Security program in 1965 and benefits will be paid starting July 1, 1966. There might be a flurry of increased hospital use at the onset but, in the long run this program will not affect hospital growth during the ten years covered by the study. There may be some shifting of patients between the various types of hospitals, which would not affect the overall picture. The number of persons 65 and older will increase during the ten years, but the proportion of total population over 65 in California will decline slightly.

6. Major legislative changes which might have an effect on the operation of State mental hospitals or privately operated nursing and convalescent hospitals cannot be anticipated at this time, and should not be taken into account in the bed or employment estimates.

7. The United States will not become involved in a major war which would affect the military hospitals by increasing the number of authorized beds, or by diverting civilian hospital workers into other occupations in the military.

Technological Change and Hospital Employment

Today's hospital differs as much from the hospital of the early 1900's as those hospitals differed from the lazaretto's of earlier days, so that a discussion of technological change must be put in its proper context--it is a continuation of past trends, even though the rate of change may be much more rapid today than it was in earlier years. The technological changes which are occurring include advances in medical and surgical techniques, changes in hospital practices, and adaptations to changing manpower situations, as well as the introduction of new technologies from other fields which can improve the quality of hospital services or make more efficient use of hospital manpower.

Tremendous modifications are possible in the light of new technologies which have been developed in other fields, particularly in the aerospace and communications industries with which California is so generously endowed. Advanced data processing systems, automated supply handling systems, and closed circuit television installations are only a few examples of space age technology which have been suggested for application to hospitals.

In fact, the potential suggested by accomplishments in these fields is so great that a word of caution is necessary to restrain the imagination from exaggerating the rate at which changes are likely to occur. New kinds of equipment and physical plants which are suitable for their use represent substantial outlays of capital, and hospital services are primarily provided by organizations which are notoriously hard put to raise money for capital investment, even in a generous community. The modernization or replacement of California's older, obsolete or inappropriate health facilities would require an estimated expenditure of more than one-half billion dollars ($500,000,000).[1] This sum does not include any of the necessary expenditures for expansion of existing hospitals or for constructing new facilities to meet the demands of population growth. It is true that not quite half of all hospital beds available in the State today are in hospitals of pre-World War II vintage, but this does not mean that many hospitals can and will soon be razed and replaced with buildings suitable for the installation of more efficient or radically different equipment, or which provide more up-to-date arrangements of the work spaces. The newer hospitals are much more efficient than older ones. Even they, however, are not easily adaptable to rearrangements that can take full advantage or even, in some cases, take any advantage of many of the recent innovations which could save labor or give better service. The exigencies of financing will almost certainly require use of these hospitals for many years to come.

Hospitals now under construction or in the design stage, of course, are taking advantage of many technological innovations and more efficient ways of arranging the work of a hospital and, as new hospitals are built, we can expect foreseeable changes to increasingly modify the working environment of the hospital, of the services which are available, and of the duties and skill requirements of hospital employees.[2]

Many additional technological changes and operational innovations are now being developed and tested which suggest even more radical changes in hospital operations. Until these innovations prove to be successful, until their potential impact on manpower requirements is measured, and until the speed with which they may be widely introduced is gauged, of course, they cannot be taken into account in the present projection of future manpower needs. This is not to suggest that innovations now under development may not affect the hospital manpower situation within the next decade; rather, it is to say that there is no present way to estimate which of them will do so, when, and in what manner. The four most significant areas in which innovations are developing are, with respect to manpower requirements: (a) the handling of supplies and stores, (b) the performance of hospital housekeeping functions, (c) the development of medical and surgical technologies which are creating new equipment and require new skills, and (d) record-keeping, which is at present a paperwork burden on hospital staffs but could be made a much lighter burden. Only the two latter changes are significant to the occupations, unique to the hospital industry, which are explored extensively in this study.

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[1] California Department of Public Health, Hospitals for California, Berkeley, California, 1964, page 11.

[2] The reader who is interested in the detail of the technological changes under development is referred to the Subcommittee on Hospitals of the Committee on Veterans Affairs, House of Representatives, 88th Congress, Second Session, Hearings (April and May 1964). The hearings reprint major articles describing what is on the horizon in the field of hospital plants, services, staffing and technologies (cf. pp. 2,221 through 2,966). See also Datamation, December 1965, Vol. 11, Number 12, pp. 25-49.

A change which has affected hospital employment, although not a technological advance, is the contracting out to vendors some of the services now usually performed by hospital employees. Laundry work, food preparation, and even some housekeeping and maintenance work fall into this area most clearly.

The adoption of disposable equipment and supplies such as syringes, bed sheets, and dishes has already eliminated some jobs, although the cost of using disposable items is often greater than the cost of reusing conventional ones.

THE CALIFORNIA HOSPITAL INDUSTRY
1964

The California hospital and nursing and convalescent home industry is as varied as is the geography of the State. Hospitals range in size from less than six beds to more than 4,000 (in several large State institutions). Employment varies from two employees in small nursing homes with less than six beds to nearly 6,000 (in one large general hospital). The physical plant may be a private home which has been converted to a nursing home, or a large modern building with all of the latest advances in medical technology available to the staff and patients; or it may be a group of buildings of varying vintages which offer a variety of levels of service to the patient.

This study was confined to establishments identified either as hospitals or as nursing and convalescent homes. Private medical and dental laboratories which are not a part of a hospital have not been included, nor have the professional offices of physicians and dentists. In 1964 there were over 2,100 separate establishments in the portion of the medical services industry covered in this study.

Characteristics of Hospitals, 1964

In 1964 the more than 2,100 hospitals in the State operated 203,600 beds. Thirty-seven percent of these beds were in general hospitals, 31 percent were in mental hospitals and 30 percent, in nursing and convalescent homes. The remaining two percent were in tuberculosis hospitals.

Hospitals covered by the study ranged in size from less than six beds to more than 4,000 beds (several State operated mental institutions are in this size range). Nearly all of the institutions with 1,000 or more beds were operated by governmental jurisdictions. In contrast, three-fourths of all hospitals operated by proprietory interests were smaller than 100 beds.

Approximately 28 percent of all beds were in nongovernmental hospitals.

For the purpose of this study, hospitals were classified into four major groups reflecting, in most cases, the main function of the hospital. It is not possible to draw hard and fast lines between categories because hospitals sometimes provide more than a single type of service. For example, mental institutions often have a small number of beds set aside for the medical and surgical care of resident patients, and large general hospitals may have beds in a psychiatric ward. In general, the beds were classified by the type of patient care provided, but, again, this was not possible in all cases. Short descriptions of the four hospital types follow:

General Hospitals

This group includes short-term stay hospitals for the care of acute conditions, maternity hospitals, children's hospitals, and a few tuberculosis hospitals. Six distinct types can be identified--hospitals licensed by the Department of Public Health, University of California teaching hospitals, institutional hospitals operated by the State of California (correctional institutions and the veteran's home), Veteran's Administration medical and surgical hospitals, military hospitals, and other federally operated hospitals. It should be noted that county hospitals are tending to change from institutions which provide care at a minimum cost level for the indigent and "medically indigent" in the county, to institutions providing a full range of services in all areas including psychiatric care to the community. County hospitals are thus becoming more and more like other general hospitals, and are appropriately included in this category.

Employees of outpatient clinics which are an integral part of the hospital have been included because it is not often possible to separate the employment for outpatient care from employment for inpatient care.

In 1964, California general hospitals were operating 75,200 beds, and employed 137,000 persons.

Mental Hospitals

The mental hospital segment of the medical services industry includes State operated hospitals for the mentally ill and the mentally retarded, Veteran's Administration hospitals for the mentally ill, private hospitals for the mentally ill and mentally retarded, and psychiatric holding and treatment facilities in State correctional institutions. (Psychiatric wards in county hospitals or general hospitals are included in the general hospital group because of the difficulty in separating out the psychiatric ward employment.) With the exception of the correctional institutions, the majority of hospitals in this group provide long-term care. In 1964, these hospitals provided beds for 63,400 patients and employed 31,800 persons.

State operated outpatient clinics and local outpatient clinics financed under the Short-Doyle Act[3] have been excluded from this study.

Nursing and Convalescent Homes

Establishments in this group provide long-term care to persons too ill to be cared for at home but who do not need the full range of services available in a general hospital. Nursing and convalescent homes vary in size from less than six beds to more than 150 beds. In 1964, these establishments provided 60,100 beds and employed 21,600 persons.

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[3] The Short-Doyle Act of 1957 provides financing for county operated mental hygiene clinics. California Welfare and Institutions Code, Div. 8, Sections 9000-9058.

Tuberculosis Hospitals

Since the number of tuberculosis beds in California decreased by more than 50 percent in the ten year period, 1955 to 1964, to 4,000, the future of the tuberculosis hospital cannot be predicted at this time. The introduction of chemotherapy to the treatment of tuberculosis reduced the length of treatment necessary, and public health campaigns aimed at early detection of the disease have greatly reduced the number of patients treated in these hospitals in recent years. If the numerical decrease were to continue through 1975 there would be no tuberculosis beds in the State. Unfortunately, however, the downward trend in newly reported tuberculosis cases has been halted--resistant strains of the bacillus seem to be emerging.

In recent years, several large tuberculosis hospitals operated by counties and by the Veteran's Administration have been converted into general hospitals which provide general medical and surgical services, although continuing to provide specialized services to those with tuberculosis. Since this kind of conversion will probably continue in the future, employment estimates for tuberculosis hospitals have been included with those for the general hospital group.

Ownership of Hospitals

By type of ownership, establishments included in the study were distributed as follows:[4]

Ownership	Number
All Hospitals	2,129
Federal Government	39
State Government	43
County Government	79
City Government	8
Special District	54
Nonprofit Association	404
Proprietary	1,502

Federal hospitals are facilities operated by the Veteran's Administration, the U. S. Public Health Service, and the Department of Defense to serve selected segments of the population. These hospitals may provide general medical and surgical care, psychiatric care, or tuberculosis treatment.

State hospitals are facilities operated by the California Departments of Mental Hygiene, Corrections, Youth Authority, and Veterans Affairs, and by the University of California as teaching hospitals. The majority of beds in these hospitals are for treatment of the mentally ill or mentally retarded.

County hospitals are institutions operated by counties, using county tax funds, to provide emergency medical services and to provide short or long term care for the indigent and "medically indigent". They may provide isolation facilities for persons with communicable diseases, and observation wards for persons with suspected mental disorders. Some of them also provide care for injured or ill law enforcement and fire fighting employees of the county.

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[4] Records of the California Department of Public Health, Bureau of Hospitals, and of the California Department of Mental Hygiene; also, annual listing given in Hospitals, Journal of the American Hospital Association, Vol. 38, No. 15, 1964.

City hospitals are institutions operated by cities, using city tax funds. They may provide the same services as a county hospital, or a more limited range of services, depending upon the size of hospital and needs of the community.

Special District hospitals are operated by special districts which have the power to levy taxes to build and support a hospital. These may serve part of a county or an entire county. They provide hospital services to patients of physicians and surgeons in private practice in an area where private facilities are inadequate or do not exist. These hospitals are operated by a board of directors responsible to the electorate of the special district.

Nonprofit hospitals are facilities operated by a nonprofit corporation to provide hospital services to patients of physicians with staff privileges at the hospital. Many nonprofit hospitals are operated by religious groups. They may be general hospitals providing a full range of services, or special purpose hospitals providing a specific range of services.

Proprietory hospitals are operated by individuals, partnerships or corporations on a profit making basis. The majority of nursing and convalescent hospitals are in this group.

The average size of a hospital tends to differ according to the type of ownership, as the following figures show.5/

Ownership	Average Number of Beds
Federal	417
State	1,189
County	323
City	26
Special District	86
Nonprofit Association	92
Proprietary	38

Employment in Hospitals

Data on beds and employment are presented with respect to three broad groups, based upon the type of treatment provided to the patient. These are General Hospitals, Mental Hospitals, and Nursing and Convalescent Homes. A fourth group--Tuberculosis Hospitals--would seem to be appropriate, but difficulty of classification suggested including Tuberculosis Hospitals in the General Hospital group (data on beds provided, however, are shown separately where available). In the majority of cases, the classification as to type of hospital

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5/ Records of the California Department of Public Health, Bureau of Hospitals, and of the California Department of Mental Hygiene; also, annual listing given in Hospitals, Journal of the American Hospital Association, Vol. 38, No. 15, 1964.

was provided by the agency from which the basic data were obtained. The categories used are not without some degree of overlap, of course, but are generally sound. Approximately forty percent of all beds were in General Hospitals, and the remaining beds were distributed nearly equally between Mental Hospitals and Nursing and Convalescent Homes. The employment picture was quite different, however: 72 percent of all employees worked in General Hospitals, 17 percent worked in Mental Hospitals, and the remaining 11 percent worked in Nursing and Convalescent Homes.

Table 2--Number of Beds and Employment
By Type of Hospital,
California, 1964

Type of hospital	Number of beds	Number of employees
Total	203,600	190,400
General hospitals	79,200	137,100
Mental hospitals	63,000	31,800
Nursing and Convalescent homes	60,100	21,600

Sources: Records of the California Department of Public Health, Bureau of Hospitals, and of the California Department of Mental Hygiene; also, annual listing given in Hospitals, Journal of the American Hospital Association, Vol. 38, No. 15, 1964.

Differences in the ratio of employees to beds between the three groups of hospitals reflect the intensity of care required by the patients each serves. General hospitals, in most cases, are designed to provide a high level of service to a patient hospitalized for a relatively short period of time. A general hospital would typically provide a full range of services including laboratories, operating rooms, physical therapy, social service, and radiology. General hospitals also use the widest range of medical service occupations.

Mental hospitals combine intensive treatment with custodial care of the patient. A patient in a mental hospital may be hospitalized for a period of only a few weeks or months, or he may be cared for over several decades. Since much of the treatment of the patient is for nonphysical disability, the proportion of nursing department personnel to other personnel is greater than in a general hospital. Also, many services such as maintenance, housekeeping and, perhaps, laundry are staffed in part by patients who are not counted as employees of the hospital.

Nursing and convalescent homes provide the patient with custodial care and a less intense level of nursing care than a general hospital. There are two basic types of care provided by establishments in the group--(a) convalescent care for a patient who does not require the full services available in a general hospital but is unable to care for himself for a period ranging from several weeks to several months, and (b) long term nursing home care for a patient who might never again be able to care for himself. The majority of nursing and convalescent home patients fall into the latter category and include the chronically ill, the senile, and the permanently and totally disabled. When these patients require surgery or diagnostic care, or when they become acutely ill, they are transferred to a general hospital. The small size of most establishments in this group and the type of patient disability makes it uneconomical and unnecessary to provide all the services of a general hospital.

In 1964, the California Bureau of Hospitals estimated that the number of hospital beds in California as a whole was adequate to meet the needs of the population when evaluated by the factors used to allocate Hill-Burton funds.[6/] There are, however, acute shortages in some areas under even these minimum standards, and an oversupply of beds vis-a-vis resident population in other areas. Areas which have an adequate number of beds may have many substandard beds--in hospitals which are old or poorly arranged--or they may have a surplus of beds for one kind of service and a shortage for another type. In some areas, for example, there is a surplus in maternity wards but a shortage in surgical wards.

More than half of all hospital beds in California are in establishments which have been constructed since World War II. Changes in medical technology and hospital techniques have made some of even these fairly new hospitals obsolete, particularly some of the general hospitals. The bulk of the beds in nursing and convalescent homes have been constructed since 1959. In some areas, the supply of nursing and convalescent home beds greatly exceeds present requirements, so that low occupancy rates are found in these areas.

Occupational Structure of Establishments Licensed by the California Bureau of Hospitals--1964

Nearly half of all persons employed in hospitals and nursing and convalescent homes licensed by the California Bureau of Hospitals are providing direct nursing care to the patient. The basic occupations in the nursing department of a hospital are registered nurse, licensed vocational nurse, nurses' aid, and orderly. Some hospitals may also employ ward clerks. The ratio of nursing department employees to other employees varies among the major types of facilities covered in this study.

General hospitals, which account for nearly three-fourths of all hospital and medical services employment, have slightly less than one nursing department employee for each employee in all other departments. Nursing homes and convalescent homes currently have about two nursing department employees for every other employee, because in most cases these facilities do not provide a full range of the services found in a general or mental hospital. A typical mental hospital operated by the State has three nursing department employees for every two employees in other departments.

The remaining employees are in the 14 departments described below:

1. Administration--the department which provides for general management of the hospital and its business affairs. The Hospital Administrator is in direct charge of this department, as well as the liaison between it and

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[6/] California Department of Public Health, Hospitals for California, Berkeley, California, 1964, p. 12. State and Federal funds for the construction of medical facilities in the State are allocated by the California Department of Public Health, Bureau of Hospitals, under provisions of the California Hospital Planning and Construction Program. For more specific information on this program cf. California Department of Public Health, op. cit., pp. 13 et seq.

the medical staff. Employees most commonly found in this department include personnel technicians, credit managers, insurance clerks, and the majority of non-medical specialized clerical personnel.

2. Laboratory--the department which includes all laboratory services except Radiology. Employees include such specialists as bioanalysts, pathologists, laboratory technicians and assistants, EEG technicians, and EKG technicians.

3. Radiology--the department which provides x-ray and, in some hospitals, nuclear medicine services. Employees may include radiology technologists and x-ray technicians. The department is under the direction of a doctor of medicine with specialization in radiology.

4. Social Service--the unit which assists patients in the hospital and their families. It may give help to patients whose illness results in a permanent disability, or it may help a family adjust to problems resulting from the hospitalization of one of its members. Employees include medical social workers, psychologists, and related clerical help.

5. Library Records--this department maintains the medical records library and, in some hospitals, a medical library. Where there are both a medical records library and a medical library there may be two head librarians. Other employees include medical records clerks, library assistants, and clerical workers.

6. Pharmacy--this unit prepares medication for patients in the hospital and, in some cases, dispenses to persons who are not hospitalized. Pharmacists, their helpers, and clerical staff account for most employment in this department.

7. Dietary--this department is responsible for preparing menus for patients whose physician or surgeon has prescribed a diet, and for preparing the food served to other patients and to the staff. Workers include dieticians, cooks, kitchen helpers, maids, meat cutters, porters, and waitresses.

8. Physical therapy--this unit is responsible for aiding patients with injuries, disabilities, and diseases through the use of massage, exercise, and other methods on the prescription of a physician. Workers include physical therapists, physical therapy attendants, and clerical staff.

9. Occupational therapy--this department is responsible for planning and organizing games and work projects which will provide the type of activity prescribed by the patient's physician. Workers include occupational therapists, recreational therapists, assistants, and clerical staff.

10. Dental--where such a unit exists, it provides hospital patients with dental care and treatment. Workers are dentists, dental hygientists, dental assistants, and dental laboratory assistants.

11. Maintenance--this unit maintains and repairs the hospital plant. Within its scope are all electrical systems, heating and cooling systems, boilers, general carpentry, and work on the hospital grounds. This department hires a variety of workers, including chief engineers, stationary engineers, firemen or stationary boilermen, groundskeepers, watchmen, handymen, and such building tradesmen as carpenters, electricians, painters, plumbers, etc.

12. Laundry--this department collects and launders hospital linens, clothing, and uniforms. It is not always a part of a general hospital, and is seldom found in nursing and convalescent homes. Size of the plant affects the likelihood of having a laundry: in smaller hospitals a laundry may be uneconomical. Employees most often found include washmen, extractor operators, flatwork ironers, hand pressers, machine pressers, tumbler operators, and marker-sorters.

13. Anesthesia--this department has jurisdiction over all anesthetics administered in the hospital. It is responsible for maintaining records of anesthetics administered, the care of equipment used in administering them, and establishing and carrying out safeguards in the administration of anesthetics. Larger hospitals may contract with a physician trained as an anesthesiologist to supervise the department. Other employees might include nurse-anesthetists, and orderlies.

14. Housekeeping--this department keeps the hospital in a clean, healthful, and sanitary condition. Halls are mopped, rooms cleaned, floors polished, and windows washed. A few hospitals now contract with outside firms for part of the housekeeping functions. Services which may be handled on a contract basis include window washing and floor polishing. The introduction of wall-to-wall carpeting in some hospitals may change the traditional duties of certain hospital housekeeping occupations. The department is headed by a chief housekeeper. Other occupations found in the department include ward maids, porters, assistant housekeepers, wall washers, floor polishers, window washers, clother-room workers, and seamstresses.

Table 3--Employment,[1] by Department In Licensed Hospitals and Nursing and Convalescent Homes[2] California and Selected Areas, 1964

Department	California	Standard Metropolitan Statistical Areas Los Angeles	 Sacramento	 San Diego	 San Francisco	Inyo County
Total	134,973.4	52,658.0	5,230.8	6,810.8	25,709.1	147.0
dministration	11,190.3	4,264.4	375.0	719.4	2,025.0	18.5
boratory	5,364.0	2,268.7	194.5	276.6	1,151.2	3.2
diology	3,059.6	1,352.2	109.5	144.0	581.5	2.3
ocial Service	909.5	439.5	66.5	49.4	138.1	0
ibrary Records	2,713.6	1,216.8	100.0	111.0	447.8	2.5
armacy	1,201.3	463.4	32.5	53.8	310.5	.5
etary	14,309.8	5,504.1	532.0	824.6	2,647.6	14.0
ysical Therapy	1,040.3	529.5	20.0	32.5	211.7	1.0
cupational Therapy	287.0	156.1	10.0	5.0	58.1	0
ntal	145.7	70.0	2.2	4.0	35.5	0
intenance	4,541.4	1,934.3	138.5	254.6	698.6	10.5
undry	3,243.4	1,360.0	119.5	89.4	669.1	5.0
esthesia	504.5	104.0	52.5	55.0	98.0	0
usekeeping	10,384.8	3,856.3	484.5	505.3	2,394.8	7.0
gistered Nurses	27,529.3	10,622.7	1,093.4	1,386.3	5,850.7	31.0
icensed Vocational Nurses	9,590.9	3,353.5	440.0	403.3	2,140.9	5.0
her Nursing	38,958.0	15,162.5	1,460.2	1,896.6	6,250.0	46.5

/ Full time equivalent.

/ Hospitals and homes licensed by the California Department of Public Health, Bureau of Hospitals. Excludes mental hospitals and State and Federal hospitals.

urce: Hospital inspection records of the California Department of Public Health, Bureau of Hospitals, for 1964.

Table 4--Employment,[1] by Department and County In Licensed Hospitals and Nursing and Convalescent Homes California 1964

Part I

County	Administration	Laboratory	Radiology	Social Service	Library Records	Pharmacy	Dietary	Physical Therapy	Occupational Therapy
Alameda	581.5	360.7	197.0	43.6	164.5	90.2	902.4	62.7	19.6
Alpine	0	0	0	0	0	0	0	0	0
Amador	9.0	5.0	.5	1.0	2.0	1.0	14.0	0	0
Butte	84.0	23.0	11.5	7.0	11.0	3.0	96.0	6.0	2.1
Calaveras	21.5	2.5	2.5	2.0	4.0	2.0	27.0	6.0	4.0
Colusa	9.0	2.0	2.0	0	2.0	0	13.0	2.0	0
Contra Costa	222.5	89.5	55.5	13.5	57.3	96.5	188.5	21.0	5.0
Del Norte	11.0	3.0	3.0	0	2.0	0	15.0	2.0	0
El Dorado	20.0	3.5	3.5	0	3.5	0	23.5	0	0
Fresno	164.0	86.5	50.0	0	55.5	14.7	317.5	18.0	2.0
Glenn	8.0	2.0	1.0	0	2.0	1.0	10.0	.5	.5
Humboldt	60.0	18.5	19.0	4.0	13.0	4.8	121.0	7.0	0
Imperial	43.5	16.0	11.0	0	9.0	5.0	62.8	1.0	0
Inyo	18.5	3.2	2.3	0	2.5	.5	14.0	1.0	0
Kern	182.5	89.8	46.7	0	64.5	34.5	288.0	8.0	2.0
Kings	40.0	5.5	4.0	0	6.5	2.0	39.5	0	0
Lake	7.0	1.5	1.5	0	1.5	0	9.5	0	0
Lassen	6.5	2.0	1.0	0	2.0	0	11.0	0	0
Los Angeles	4,264.4	2,268.7	1,352.2	439.5	1,216.8	463.4	5,504.1	529.5	156.1
Madera...............	32.3	5.7	3.7	0	2.2	1.5	40.5	1.0	0
Marin	110.0	32.0	20.0	4.0	17.0	4.0	123.5	10.0	2.0
Mariposa	5.0	.5	.5	0	1.0	0	6.5	0	0
Mendocino	31.5	11.0	9.5	3.0	8.0	1.0	39.0	1.0	.5
Merced	45.5	10.0	7.0	0	11.0	3.5	92.0	2.0	2.0
Modoc	6.0	2.0	2.0	0	1.0	0	7.5	.5	0
Mono	4.0	.5	.5	0	0	0	3.0	0	0
Monterey	90.0	48.5	20.0	11.0	22.5	7.5	138.0	6.0	2.0
Napa	71.0	16.0	14.0	0	13.0	5.0	71.5	12.0	1.5
Nevada	30.0	2.0	6.0	0	4.5	1.5	36.0	0	0
Orange	578.5	190.5	125.0	22.0	81.0	46.0	607.5	17.5	5.5
Placer	59.5	16.0	6.0	1.0	11.0	3.0	79.0	0	1.0

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[1] Full time equivalent

Note: Employment data for additional departments are given in Part II of this table.

Table 4—Employment,[1/] by Department and County
In Licensed Hospitals and Nursing and Convalescent Homes
California 1964 (continued)

Part II

County	Administration	Laboratory	Radiology	Social Service	Library Records	Pharmacy	Dietary	Physical Therapy	Occupational Therapy
Plumas	14.5	2.5	2.0	0	1.0	0	17.5	0	0
Riverside	183.0	73.0	46.5	15.5	42.5	12.8	221.5	18.5	4.0
Sacramento	277.5	173.5	92.5	61.5	80.0	24.5	399.5	17.0	9.0
San Benito	9.5	2.5	2.5	0	1.0	1.0	14.0	0	0
San Bernardino	304.0	173.8	105.7	20.0	99.5	35.7	459.0	45.1	3.0
San Diego	719.4	276.6	144.0	49.4	111.0	53.8	824.6	32.5	5.0
San Francisco	831.5	522.5	244.5	71.0	150.0	99.3	1,040.0	88.0	25.5
San Joaquin	153.0	69.0	34.5	14.0	35.5	16.0	100.0	3.0	.5
San Luis Obispo	65.5	17.5	15.5	.5	13.0	7.0	70.0	4.0	.5
San Mateo	279.5	146.5	64.5	6.0	59.0	20.5	393.2	30.0	6.0
Santa Barbara	139.0	60.5	39.5	10.0	39.5	14.0	206.0	6.0	4.0
Santa Clara	606.0	312.0	156.0	52.5	129.0	58.0	603.8	45.5	13.5
Santa Cruz	64.0	23.0	10.5	10.0	19.0	5.5	109.0	1.0	0
Shasta	65.0	12.0	6.0	2.0	11.0	7.5	61.0	2.0	0
Sierra	1.0	.5	.5	0	0	0	1.5	0	0
Siskiyou	12.0	4.0	7.0	1.0	2.0	2.0	38.0	0	0
Solano	59.5	22.5	17.5	7.5	18.0	10.0	89.5	9.5	3.0
Sonoma	140.5	31.0	17.5	7.0	27.5	7.5	150.4	3.5	2.2
Stanislaus	110.5	23.0	14.5	11.0	20.3	7.5	164.5	7.0	0
Sutter	21.0	8.0	4.0	1.0	4.0	2.0	31.0	1.0	0
Tehama	14.5	6.0	4.0	0	3.5	1.5	23.0	.5	0
Trinity	6.5	1.0	1.0	0	1.0	0	10.5	0	0
Tulare	85.0	16.0	10.0	3.0	15.5	3.4	158.0	4.0	2.0
Tuolumne	14.0	2.5	2.0	0	1.0	.2	15.5	0	0
Ventura	147.2	57.0	26.0	11.0	27.0	12.0	145.5	4.5	3.0
Yolo	38.0	5.0	11.0	4.0	9.0	5.0	53.5	3.0	0
Yuba	13.0	5.0	2.0	0	2.0	3.0	9.0	0	0
Total	11,190.3	5,364.0	3,059.6	909.5	2,713.6	1,201.3	14,309.8	1,040.3	287.0

1/ Full time equivalent

Note: Employment data for additional hospital departments are given in Part II of this table.

Table 4--Employment,[1] by Department and County
In Licensed Hospitals and Nursing and Convalescent Homes
California 1964 (continued)

Part I (continued)

County	Dental	Maintenance	Laundry	Anesthesia	Housekeeping	Registered Nurse	Licensed Vocational Nurse	Other
Alameda	14.5	263.2	221.7	57.5	782.3	1,744.2	835.4	1,831.5
Alpine	0	0	0	0	0	0	0	0
Amador	0	1.0	0	0	8.0	14.0	7.0	42.0
Butte	0	35.5	12.5	3.0	57.5	151.0	190.5	250.0
Calaveras	17.0	9.0	17.5	0	28.0	24.5	24.0	80.0
Colusa	0	5.0	0	0	13.0	9.0	8.0	42.0
Contra Costa	3.0	65.5	55.0	7.5	246.0	595.0	270.0	702.5
Del Norte	0	7.0	3.0	0	14.0	27.0	2.0	49.0
El Dorado	0	8.0	7.5	0	13.0	45.5	10.0	82.0
Fresno	4.0	78.8	80.0	5.0	206.5	517.0	256.0	902.5
Glenn	0	0	1.0	7.0	10.0	22.0	10.0	50.0
Humboldt	0	32.0	15.0	0	74.5	162.0	104.0	248.0
Imperial	0	25.5	7.0	0	26.5	64.0	22.0	141.0
Inyo	0	10.5	5.0	0	7.0	31.0	5.0	46.5
Kern	0	110.0	73.0	6.0	167.0	429.5	158.0	801.5
Kings	0	15.0	11.0	.5	34.5	64.0	31.0	155.0
Lake	0	4.0	1.0	0	4.5	14.0	11.0	33.5
Lassen	0	2.5	0	0	4.5	16.5	2.5	31.0
Los Angeles	70.0	1,934.3	1,360.0	104.0	3,856.3	10,622.7	3,353.5	15,162.5
Madera	0	13.0	3.0	1.0	24.0	53.0	23.0	109.0
Marin	0	20.5	22.7	0	71.0	239.5	50.5	136.0
Mariposa	0	3.0	0	0	2.0	4.0	3.0	10.0
Mendocino	0	14.0	5.4	1.0	20.9	56.0	16.5	131.0
Merced	1.0	35.0	16.0	0	58.5	99.5	44.0	224.0
Modoc	0	3.0	3.5	0	4.0	12.0	6.0	28.0
Mono	0	2.0	1.0	0	.5	6.5	4.0	1.0
Monterey	0	48.0	29.0	12.0	106.5	269.5	87.0	363.0
Napa	0	26.5	13.0	4.0	41.0	110.0	33.0	207.5
Nevada	0	12.5	4.0	0	21.5	34.5	35.5	108.0
Orange	6.0	181.5	106.0	46.0	407.0	1,268.5	305.5	1,826.0
Placer	.2	39.0	21.0	4.0	41.5	100.5	32.5	189.0

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[1] Full time equivalent

Note: Employment data for additional hospital departments are given in Part I of this table.

Table 4--Employment,[1] by Department and County
In Licensed Hospitals and Nursing and Convalescent Homes
California 1964 (continued)

Part II (continued)

County	Dental	Maintenance	Laundry	Anesthesia	Housekeeping	Registered Nurse	Licensed Vocational Nurse	Other
Plumas	0	2.5	1.5	0	8.5	28.0	2.0	35.0
Riverside	0	71.0	29.5	4.0	163.5	420.0	149.0	655.0
Sacramento	2.0	79.5	95.5	48.5	403.5	897.4	384.5	1,104.2
San Benito	0	6.0	0	0	5.0	16.0	10.0	32.0
San Bernardino	0	135.0	140.5	30.0	304.5	697.3	217.5	1,256.0
San Diego	4.0	254.6	89.4	55.0	505.3	1,386.3	403.3	1,896.6
San Francisco	17.0	269.0	285.0	33.0	1,031.0	2,420.5	659.5	2,661.0
San Joaquin	0	19.0	9.5	1.0	55.5	136.0	334.5	574.5
San Luis Obispo	0	19.5	7.5	0	38.0	115.5	29.5	215.5
San Mateo	1.0	80.4	84.7	0	264.5	851.5	325.5	919.0
Santa Barbara	0	72.0	53.0	2.0	138.5	415.5	126.5	550.5
Santa Clara	3.0	193.9	176.8	42.0	439.5	1,568.5	187.4	1,996.3
Santa Cruz	0	45.5	18.5	4.0	50.5	163.0	56.5	334.0
Shasta	0	14.5	8.5	0	45.0	94.5	76.5	184.0
Sierra	0	0	0	0	0	2.0	3.0	6.0
Siskiyou	0	8.0	5.0	0	15.5	28.5	5.0	86.0
Solano	0	16.5	1.5	3.0	75.5	283.5	48.5	235.5
Sonoma	1.0	51.0	34.0	14.5	98.5	263.4	98.4	467.0
Stanislaus	0	49.0	37.0	4.0	112.0	256.5	199.4	381.4
Sutter	0	6.5	2.0	0	19.0	44.5	34.0	92.0
Tehama	0	3.5	5.0	0	11.5	31.0	28.0	59.0
Trinity	0	5.0	4.0	0	3.0	8.5	0	22.5
Tulare	0	53.5	23.5	0	86.5	164.5	75.0	547.0
Tuolumne	0	3.5	.2	0	8.5	24.5	12.5	45.5
Ventura	2.0	54.7	33.5	1.0	102.0	289.5	120.5	431.5
Yolo	0	20.0	3.0	0	39.5	95.5	23.0	167.0
Yuba	0	3.0	0	4.0	9.0	21.0	41.0	21.0
Total	145.7	4,541.4	3,243.4	504.5	10,384.8	27,529.3	9,590.9	38,958.0

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[1] Full time equivalent

Note: Employment data for additional hospital departments are given in Part I of this table.

EMPLOYMENT AND OCCUPATIONAL OUTLOOK
1964 - 1975

Aggregate Outlook

The California Department of Finance expects the total population of the State to grow from 18,234,000 in 1964 to 24,830,000 in 1975, an increase of 36 percent. To maintain an adequate level of service for this growing population will require California hospitals to increase the number of beds from 203,600 in 1964 to 250,400 in 1975 and employment, from 190,400 to 257,300. (See Tables 5 through 8.)

In 1964, general hospitals in California provided 75,200 beds and had 137,100 employees; by 1975, the number of beds in general hospitals is projected to increase by 37 percent to 101,900 and the number of employees, to 188,000. This growth parallels the expected population increase.

The number of active beds in California general hospitals is subject to substantial change because of military needs. Department of Finance population forecasts necessarily assume that the military component of the California population will remain constant, and such stability was assumed here in projecting the number of beds and the number of employees in hospitals on military bases. It must be recognized that changes in military requirements, when they occur, are rapid and have a heavy impact on both the military population resident in California and on the number of beds used to care both for that population and for any hospitalized personnel evacuated from overseas theaters of activity.

The number of beds in nursing and convalescent homes is currently growing faster than in any other of the four hospital service types. Future growth is not expected to be at such a fast rate but, even so, it will be more rapid than that of other major categories in the industry. The expected 11-year growth will expand the number of beds in nursing homes by 38 percent from 60,100 in 1964 to 84,900 in 1975 and employment, by 39 percent from 21,600 to 30,500. It should be noted that the rate of expansion in nursing homes is expected to exceed population growth by only a slight amount, whereas in the past few years the creation of new nursing homes to provide additional beds for older persons and the consequent expansion of employment has greatly exceeded the rate of population growth.

Several factors have had an effect upon the recent growth in the number of nursing and convalescent home beds. Since 1962, Medical Assistance for the Aged[7] has provided State funds for nursing home care for the indigent and "medically indigent" aged who are unable to care for themselves. Many older persons have consequently moved from County Hospitals to privately owned nursing homes, where they receive the required care at a cost considerably below the amount necessary to maintain them in a general hospital. The ratio of nursing home beds to population has increased from 20 beds per thousand persons aged 65 and older in 1960, to approximately 35 per thousand at the present time, and is projected to increase to about 40 per thousand by 1975. (Some of the additional growth in nursing home facilities will not be for the disabled aged, but for other groups such as the mentally retarded.)

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[7] California Welfare and Institutions Code, Div. 5, Part 4, Sections 4700-4756.

A survey conducted in September 1964 by the Department of Public Health,[8] Bureau of Hospitals, indicates that 95 percent of all patients in nursing and convalescent homes were 65 years of age or older, and 55 percent were receiving payments under Medical Assistance to the Aged.

Titles XVIII and XIX of the Social Security Act, enacted in 1965 (P.L. 89-97) together with related California enabling legislation (Stat. 1965, 2nd Ext. Sess. Ch. 4) will provide additional persons with the means to afford nursing home care. This is not likely to cause a major acceleration in growth, however, since nursing home care under this program, conventionally called "Medicare", is limited to 200 days, and since the patient must first be hospitalized in a general hospital before being entitled to benefits for nursing home care. Then, too, a nursing home must be affiliated with a general hospital to qualify for payment under Medicare.

Declines in the number of available beds are expected for both Mental Hospitals and Tuberculosis Hospitals over the period of the study, but it can be expected that more intensive care in mental hospitals will require their employment to rise despite a reduction in the number of beds. In 1964, there were 63,400 beds in Mental Hospitals and by 1975 this number will be reduced to 60,000. In contrast, employment in this segment of the hospital industry is expected to increase by 22 percent, from 31,800 in 1964 to 38,900 in 1975. An increase in the ratio of employees to patients is planned to allow more intensive care of persons committed to mental institutions for the treatment of mental illness. This reflects a change in the treatment policies of the State Department of Mental Hygiene which will permit the treatment of more patients, while shortening the average length of stay in a hospital. Local community resources such as out-patient clinics are also being used increasingly to provide care for persons who do not require long periods of hospitalization. In the past, a State hospital or a Veterans Administration facility was the only resource available to most persons.

Reference should again be made to the basic assumption which relates to the impact of "Medicare". It is recognized that there may be a flurry of increased hospital use at the beginning of the program (the availability of new resources to meet medical costs always brings out a backlog of unmet needs) but this program in its present form is not expected to affect aggregate, long run hospital growth during the 11 years covered by the study. Rather, "Medicare" in its present form is more likely to shift patients around among the various types of hospitals. While the present projections take account of the impact of "Medicare" in its present form, any extension of benefits to other segments of the population, by either the Federal Government or by the State of California, could change aggregate outlook for hospital and medical services.

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[8] California Department of Public Health, Study of Nursing and Convalescent Homes in California, Berkeley, California 1964, p. 25, Table 12.

Table 5--Hospital Beds and Employment By Type of Hospital — California Estimates for 1964-1975

Year	Total	General Hospitals	Mental Hospitals	Nursing Homes	Tuberculosis Hospitals
1964					
Beds	203,600	75,200	63,400	60,100	4,000
Employment	190,400	137,100	31,800	21,600	*
1965					
Beds	210,300	78,400	63,600	64,400	3,900
Employment	198,200	142,900	32,200	23,100	*
1967					
Beds	213,500	82,500	58,800	68,500	3,700
Employment	208,400	150,500	33,400	24,600	*
1970					
Beds	227,300	91,000	58,700	74,100	3,500
Employment	230,100	167,200	36,400	26,600	*
1975					
Beds	250,400	101,900	60,000	84,900	3,500
Employment	257,300	188,000	38,900	30,500	*

*Included with general hospital employment.

Table 6—Hospital Beds and Employment General Hospitals, by Type of Ownership — California, Estimates for 1964-1975

Year	Total	Local Govt. nonprofit, proprietary	State of California		U.S. Government		
			University of California	Other	Veterans Administration	Military	Other
1964							
Beds	75,200	61,700	1,100	1,600	4,900	5,500	500
Employment	137,100	116,600	3,600	900	5,900	9,500	600
1965							
Beds	78,400	64,700	1,100	1,700	4,900	5,500	500
Employment	142,900	122,300	3,600	900	5,900	9,500	600
1967							
Beds	82,500	68,800	1,100	1,900	4,700	5,600	500
Employment	150,500	130,000	3,700	1,000	5,700	9,600	600
1970							
Beds	91,000	75,100	1,900	2,100	6,100	5,000	500
Employment	167,200	142,000	6,700	1,700	7,400	9,000	600
1975							
Beds	101,900	86,000	2,000	2,100	6,100	5,200	500
Employment	188,000	162,600	6,700	1,700	7,400	9,000	600

Table 7—Hospital Beds and Employment
Mental Hospitals, by Type of Ownership—
California, Estimates for 1964-1975

Year	Total	Private Hospitals	State Hospitals Mentally ill	State Hospitals Mentally retarded	State Hospitals Other	Veterans Administration Hospital
1964						
Beds	63,400	10,600	33,900	13,100	1,100	4,600
Employment	31,850	7,500	14,100	6,000	*	4,100
1965						
Beds	63,600	11,100	33,600	13,100	1,100	4,600
Employment	32,200	8,000	14,100	6,000	*	4,100
1967						
Beds	58,800	11,700	28,000	13,100	1,100	4,800
Employment	33,400	8,400	14,700	6,000	*	4,300
1970						
Beds	58,700	12,800	27,500	10,300	2,500	5,500
Employment	36,400	9,000	15,000	7,500	*	4,900
1975						
Beds	60,000	14,600	27,000	10,300	2,500	5,500
Employment	38,900	11,000	15,500	7,500	*	4,900

* Included in same category in general hospitals due to difficulty in separating employment by activity.

Table 8--Hospital Beds and Employment
Nursing and Convalescent Homes, and Tuberculosis Hospitals by Ownership
California, Estimates for 1964-1975

Year	Nursing and Convalescent Homes			Tuberculosis Hospitals			Other	
	Total	Nonprofit & proprietary	State Hospitals	Total	Local Govt. & private	Veterans Administration	Total	Other
1964								
Beds	60,100	59,800	350	4,000	3,300	700	800	800
Employment	21,600	21,600	*	*	*	*	*	*
1965								
Beds	64,400	64,000	350	3,900	3,200	700		
Employment	23,100	23,100	*	*	*	*		
1967								
Beds	68,500	68,100	450	3,700	3,000	700		
Employment	24,600	24,600	*	*	*	*		
1970								
Beds	74,100	73,600	450	3,500	2,800	700		
Employment	26,600	26,600	*	*	*	*		
1975								
Beds	84,900	84,400	450	3,500	2,800	700		
Employment	30,500	30,500	*	*	*	*		

* Included in same category in General Hospitals due to difficulty in separating employment by activity.

Projections for Specific Communities

Projections for the State of California as a whole, of course, provide only partially satisfying guidelines as to the manpower situation of a service industry such as this, where location is a major factor with respect to both the need for, and ability to recruit personnel. Information is given in the preceding chapter about the current availability of beds and about employment in each county of the State for hospitals and nursing and convalescent homes licensed by the Bureau of Hospitals. Projections of future needs cannot safely be made in the same detail, because of the unreliability of any projection for a smaller community in which the construction of a single hospital could completely change the local manpower situation. The present study, consequently, seeks to meet the need for specific local information by providing projections for the Los Angeles-Long Beach, the San Francisco-Oakland, the San Diego, and the Sacramento Standard Metropolitan Statistical areas (see Tables 9 through 12). The same assumptions used to prepare the State projections underlie those for specific communities.

In addition, an estimate is presented for Inyo County (see Table 13), but solely to indicate the kind of situation that might be expected in a rural county. A comparison of the data for Inyo County with those for any one of the major metropolitan areas will suggest how much more difficult and risky it is to make an estimate for a small rural county, and what a tremendous difference might be made in the figures for the county by the addition of even a small, new facility. Along the same line, it must also be noted that a change in the number of beds or the level of activity in a large State mental hospital (e.g., Mendocino State Hospital in Mendocino County) or in a large military hospital (e.g., Fort Ord in Monterey County) could completely change the manpower outlook in some small counties--and such changes could be made by a single decision of the Congress, the legislature, or the authorities responsible for administering the facility. Nevertheless, a projection for Inyo County, even when hedged with profound reservations, as it must be, is believed to be worthwhile because of the importance of hospital facilities to the smaller counties in which they are located.

Table 9—Hospital Beds and Employment
By Type of Hospital
Los Angeles-Long Beach SMSA
Estimates for 1964-1975

Year	Total	General Hospitals	Mental Hospitals	Nursing Homes
1964				
Beds	57,700	30,800	10,800	16,100
Employment	54,300	38,800	6,500	8,500
1965				
Beds	59,000	31,600	11,000	16,400
Employment	58,700	43,400	6,700	8,600
1967				
Beds	60,800	32,600	11,100	17,100
Employment	60,900	45,100	6,800	9,000
1970				
Beds	66,200	35,600	12,300	18,200
Employment	66,300	49,100	7,600	9,600
1975				
Beds	71,700	38,800	12,800	20,100
Employment	72,100	53,500	8,000	10,600

Table 10-- Hospital Beds and Employment
By Type of Hospital
Sacramento SMSA
Estimates for 1964-1975

Year	Total	General Hospitals	Mental Hospitals	Nursing Homes	Tuberculosis Hospitals
1964					
Beds	6,600	3,000	2,300	1,400	*
Employment	6,100	4,400	900	700	--
1965					
Beds	6,900	3,200	2,300	1,500	*
Employment	6,500	4,800	900	800	--
1967					
Beds	7,300	3,500	2,300	1,600	*
Employment	6,900	5,100	900	900	--
1970					
Beds	8,000	4,000	2,300	1,800	*
Employment	8,300	6,400	900	1,000	--
1975					
Beds	9,100	4,700	2,300	2,100	*
Employment	9,400	7,400	900	1,200	--

* Included with General Hospitals due to classification by Bureau of Hospitals.

Table 11—Hospital Beds and Employment
By Type of Hospital
San Diego SMSA
Estimates for 1964-1975

Year	Total	General Hospitals	Mental Hospitals	Nursing Homes
1964				
Beds	8,400	5,500	650	2,200
Employment	9,000	7,400	460	1,100
1965				
Beds	8,900	5,800	700	2,300
Employment	9,500	7,800	480	1,200
1967				
Beds	9,300	6,000	840	2,500
Employment	9,900	8,100	630	1,300
1970				
Beds	11,700	7,100	1,980	2,600
Employment	12,600	9,900	1,350	1,400
1975				
Beds	13,100	7,700	2,480	3,000
Employment	13,900	10,600	1,720	1,500

Table 12--Hospital Beds and Employment
By Type of Hospital
San Francisco-Oakland SMSA
Estimates for 1964-1975

Year	Total	General Hospitals	Mental Hospitals	Nursing Homes
1964				
Beds	27,900	19,100	1,800	7,000
Employment	31,200	25,700	1,600	3,900
1965				
Beds	29,100	19,900	1,900	7,400
Employment	31,800	26,800	1,600	3,300
1967				
Beds	30,400	20,700	2,000	7,700
Employment	33,000	27,900	1,700	3,500
1970				
Beds	31,900	21,500	2,100	8,300
Employment	34,300	28,700	1,800	3,700
1975				
Beds	35,100	23,600	2,300	9,300
Employment	37,500	31,400	2,000	4,100

Table 13--Hospital Beds and Employment
By Type of Hospital
Inyo County
Estimates for 1964-1975

Year	Total	General Hospitals	Mental Hospitals	Nursing Homes
1964				
Beds	115	27	--	88
Employment	147	100	--	47
1965				
Beds	115	27	--	88
Employment	147	100	--	47
1967				
Beds	115	27	--	88
Employment	147	100	--	47
1970				
Beds	121	27	--	94
Employment	158	105	--	53
1975				
Beds	126	27	--	99
Employment	165	105	--	60

Replacement Needs

An estimate of the full extent of job opportunities in, and the recruiting needs of the hospital industry is only incompletely suggested by the foregoing projections, which are limited to the number of employees to be required. None of the projections includes any allowance for the replacement of workers who are now in the industry but will leave it for other employment, or who will withdraw from the labor market over the course of the next ten years. Replacement needs will be heavy, particularly in the nursing department where turnover is high and many of those who leave a job at one hospital do not go to work at another but, instead, withdraw from the industry. Unfortunately, no reliable information is available to support even a rough estimate of replacement needs. Some turnover data are available from studies made by the U.S. Public Health Service in 1955.[9/] A national study of 51 general hospitals indicated that they had to hire about 70 registered nurses a year to maintain a staff of a hundred; that they had to hire a slightly larger number of nurse aids, attendants, and orderlies to maintain employment of a hundred; and that they had to hire approximately 35 practical nurses a year to maintain a payroll of one hundred. Such turnover figures, of course, include shifts from one hospital to another, and do not throw any direct light on the volume of shifts into and out of the hospital industry. Nevertheless, it is reasonable to believe that an industry with such substantial rates of job changing in occupations primarily filled by women must have a serious problem in recruiting new entrants to the industry in order to replace those who leave.

Another indication of the replacement needs of the industry can be inferred from records of employment covered by the California Unemployment Insurance Code. In 1964, some 198,500 different individuals earned wages in the medical services industry group. Average employment in 1964 was 135,800. The difference, 62,700, reflects movement into and out of the covered sector of the industry during the course of the year. These data relate to employment in the entire medical services industry group, which includes medical, dental, and similar offices, and cover only the one-third of all hospital employment which is in establishments operated by proprietors or by non-profit organizations that have elected coverage. The data, then, suggest rather than provide direct evidence on the magnitude of movement of workers into, and out of the industry.

Specific studies of personnel losses by the industry are the only way to fill the important gap which must be left, at the present time, in estimating the full manpower requirements of the hospital industry for the next decade.

How Current Shortages Affect the Outlook

Before turning to a detailed discussion of requirements by occupation, it is appropriate to discuss the present imbalance between the demand and supply of workers, the ways in which the industry is trying to correct these imbalances, and the pressures these imbalances generate to modify the occupational structure of the industry. The most acute shortages of personnel are in the nursing department, particularly with respect to trained staff to work the night shifts. A hospital, like most residential institutions, operates on a 24-hour day and certain employees must be available to staff every shift, despite the fact that it is not always easy to recruit people who are willing to take the more inconvenient and less attractive second and third shift jobs.

Registered nurses are in very short supply in all areas of the State, as are licensed vocational nurses. There are moderate shortages of other hospital workers

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9/ U.S. Department of Health, Education and Welfare, Toward Quality in Nursing: Needs and Goals, Washington, D. C. 1963. p. 47.

in almost every area. Shortages in most of these occupations often reflect the low wages offered, or the difficulty of finding people who meet minimum qualifications set by the employer. In general, suburban and rural areas find it more difficult to obtain an adequate supply of workers than the larger urban areas.

The present shortages of registered nurses can only be expected to intensify during the next ten years, because the number entering training is not keeping pace with the growth of the population that needs professional services. Nursing schools are training more workers than in past years, it is true, but they have difficulty expanding their teaching staffs and attracting a large enough proportion of each year's high school graduates to expand the nursing profession as rapidly as necessary.

Persistence of the present shortages, and the shortfall of nurses completing training seem likely to force the industry to make additional substantial modifications in its staffing patterns. It would be possible to further upgrade the duties of the registered nurse, limiting her almost exclusively to supervisory and administrative tasks, and provide virtually all direct patient care by such personnel as licensed vocational nurses and nurse aids who would carry out their duties under the careful supervision of the registered nurse.

Another possibility would be the development of technologies which would take care of the record keeping and other necessary but incidental chores and free the registered nurse for only professional duties.

The emergence of team nursing, in which the nurse carries out direct nursing duties but is aided by others, is another response to present shortages which will undoubtedly be extended during the next ten years. The duties the nursing team imposes on personnel below the level of registered nurse increase the skill required to be a licensed vocational nurse or nurse aid. In intensive care units technicians are now used extensively and perhaps they will be added in the future to the nursing team itself in specialized wards.

Nurses are not the only hospital personnel in short supply, and the necessity of meeting the needs for hospital services under shortage conditions is giving greater urgency to technological change and is forcing most personnel to improve their skills. Eliminating many menial tasks and increasing reliance on new technological developments, the normal responses in every industry to manpower shortages, will continually modify the staffing patterns of the hospitals and raise the educational and training requirements of the jobs affected.

The changing pattern of hospital staffing, then is already foreshadowed in part by the changes which are going on in hospitals today. It is clear that technicians will play an increasing role in the treatment of patients and, as skill levels and salaries increase for these technicians, more men may be attracted to these occupations. The ratio of males to females in hospital occupations can be expected to change somewhat, reducing the heavy preponderance of women which now characterizes hospital employment. Laboratories will become more complex, with new equipment to handle routine activities which presently are very time consuming (for example, machines to type and test blood already exist, and are in limited use). Many of the occupations requiring minimal skill (such as laboratory dishwasher, or hypodermic needle sharpener) will disappear while the demand for more highly skilled personnel will increase.

A few hospitals are presently contracting with outside firms for the preparation of patients' meals. The practice is relatively new, but further spread seems likely if costs are competitive with the cost of preparing food in a hospital kitchen. The food preparation areas of the hospital plant can thus be minimized, allowing more space for other hospital operations.

Housekeeping and the laundry may also become a much smaller part of total employment in the industry, if an increased amount of work is contracted out to vendors and more hospitals adopt disposable linens and materials which require less upkeep.

Many changes are being made in record keeping activities in the medical records library and the admissions office, and changes in other departments must be expected. Electronic data processing systems already in existence are being tested for possible applications to hospitals, and data processing service bureaus are being used by hospitals in several states to handle patient records on a fee per record basis.

Training

A discussion of the manpower outlook of the hospital industry would also be incomplete without reference to the training programs which exist to prepare people for employment in the industry. Training for registered nurses, of course, is a most critical area, both to prepare new entrants to the profession and to retrain those who had once been active in it but, when returning after being out of the labor market for a number of years, find they have not kept up with developments in the interim.

Training for registered nurses has been in a process of change over the past ten years, and more. Three avenues are now open to the prospective registered nurse--a four-year college or university course leading to a baccalaureate degree, a three-year course at a hospital-affiliated nursing school and, the newest addition, a two-year junior college course. The two-year course is in part an attempt to attract more people into the nursing field by shortening the training period.

Hospitals in some areas of the State are actively recruiting nurses from other countries who are eligible for California registration, to alleviate the shortage in this occupation. The hospital pays for the nurse's transportation from her native country to the hospital and, in exchange, the nurse agrees to pay back the transportation cost and to work for one year at the hospital.

Of equal interest are training programs to prepare those who will hold nursing jobs below the level of registered nurse, and programs to train technicians. Licensed vocational nurses are being trained to relieve the registered nurse of many tasks. Technicians are being trained to operate the variety of machines which have come into existence in the past several years, work which once might have been done by a registered nurse and, in a smaller hospital, may still be the nurse's responsibility.

Persons in many of the newer occupations in hospitals receive on-the-job training. After a number have been trained in an occupation, there seems to be a tendency to form an organization to set standards and, usually after a period of time, to establish educational requirements and formal, institutional training courses. The x-ray technician training course is an example of the trend to upgrade requirements for new entrants. This upgrading process seems to be at work in many of the occupations which are unique to medical service establishments. For example, medical records clerks are now becoming medical records technicians, and x-ray technicians are becoming radiological technologists. To reach the higher classification, the employee is required to have more education and, in some cases, a minimum amount of experience.

The Federal Manpower Development and Training Act of 1962 (P.L. 87-415) has provided funds to train the unemployed and underemployed for a variety of medical service occupations in the sub-professional categories. Local public and private adult schools and junior colleges have developed or expanded existing courses to train people for jobs in the medical field.

Outlook for Specific Occupations

The outlook to 1975 for each of 11 significant occupations is presented in the following pages. Each of these outlook statements must be read in the light of the projections of demand for hospital services presented earlier in this report, and the current manpower problems which affect the industry.

The occupations for which projections have been prepared comprise more than half of all current employment in hospitals, and an even larger share of employment in the nursing department. It was not possible to canvass the outlook for all occupations used in hospitals and, indeed, it did not seem necessary to do so with respect to occupations which are not unique to, nor primarily used in hospitals. Neither was it possible to develop projections of the need for the many occupations which are so specialized that the numbers employed in them are small, and whose prospects may be changed radically by techological developments whose nature and timing cannot be foreseen. To cover the prospects of such occupations (they are important but, nevertheless, are minor from a manpower point of view) would give a specious appearance of exactitude far beyond the capability of anyone who looks as far into the future as 11 years.

Note: Identification of each occupation includes its classification code in U.S. Department of Labor, Bureau of Employment Security, Dictionary of Occupational Titles. References are given to both the Second Edition (1949) and the Third Edition (1965).

Registered Nurse,(DOT Code 0-33 2nd Revision, 075-378 3rd Revision).

The **Registered Nurse** is the leader of the hospital nursing staff She performs general nursing services in a hospital or other medical facility. She attends to the patient's needs as directed by a physician and supervises the work of the subordinate members of the nursing team including licensed vocational nurses, psychiatric technicians, nurse aids, orderlies, and ward clerks. She attends to the needs of patients in an assigned unit. She may specialize in one type of patient such as obstetrical care, pediatric care, or psychiatric care.

Job preparation:

At the present time there are three programs which culminate in licensing as a Registered Nurse. A student may enroll in a two-year course at a junior college and graduate with an Associate of Arts degree; she may pursue a three-year diploma program at a hospital school of nursing; or she may work toward a baccalaureate degree which requires four years of study at a college or university. All three programs lead to a full license, but advancement to higher levels such as head nurse or nursing administration is often dependent upon the degree which a Registered Nurse has earned.

Future prospects:

There are excellent opportunities for graduates of all three programs. A hospital operates 24 hours a day and the demand for nurses far exceeds the number available and interested in employment.

It is widely accepted by the industry that the number of Registered Nurses employed in California hospitals and nursing homes was about 15 percent below the need for nurses in 1964 (doctors offices and other eight-to-five type jobs such as public health nursing, school or industrial nursing, are adequately staffed at present). The shortage is particularly felt when a hospital or nursing home is trying to recruit personnel for work on evening or late night shifts. In preparing estimates of employment in the future, the benchmark used was the number of nurses employed in 1964 adjusted upward by 15 percent.

Several innovations may affect the future need for nurses. Studies have shown that an appreciable amount of nursing time is spent in paperwork processing. Transfer of much of this work from a nurse to a ward clerk or an electronic data processing system could reduce the number of Registered Nurses required to care for a specified number of patients.

As technological change results in introduction of new equipment for the care of a patient, technicians are trained to operate this equipment and part of the patient care will shift from the nurse to the technician. These trends are not clear enough at the present time to predict the future impact in employment of Registered Nurses in hospitals and nursing homes.

Hospitals may elect to increase the quality and intensity of nursing services to the patient rather than cut back personnel. The timing of introduction of these savings in nursing time is also difficult to predict at this time. For this reason, the future needs for Registered Nurses has been estimated as a constant ratio to the number of employees in hospitals.

Table 14—Estimated Employment of Registered Nurses In Hospitals and Nursing and Convalescent Homes California and Selected Areas 1964-1975

Year	Standard Metropolitan Statistical Areas					
	California	Los Angeles	Sacramento	San Diego	San Francisco	Inyo County
1964 actual	32,400	11,500	1,100	2,000	6,700	64
1964 need	37,200	13,200	1,200	2,300	7,700	64
1965	38,800	14,300	1,300	2,400	7,800	64
1967	40,800	14,900	1,400	2,500	8,100	64
1970	45,000	16,200	1,700	3,200	8,400	65
1975	50,300	17,600	1,900	3,500	9,200	67

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Licensed Vocational Nurse.(DOT Code 0-52.83 2nd Revision, 079-378 3rd Revision).

The Licensed Vocational Nurse performs the less complex duties of a staff nurse. She works under the supervision of a physician or of a registered nurse in caring for patients who are not acutely ill. She assists the professional nurse with patients who are seriously ill. She may supervise the nurse aids or orderlies. She may administer specified medicines and observe patient reactions.

Job preparation:

Must complete a course at an approved school for Licensed Vocational Nurses and pass a licensing examination at completion of training. Approved schools normally will accept applicants up to the age of 50, so this is a good training course for older women. A number of Licensed Vocational Nurses in California have been trained in Manpower Development and Training Act sponsored courses.

Future prospects:

There is a shortage of Licensed Vocational Nurses at the present time which will undoubtedly continue through the next decade unless training programs can be expanded to meet the expected increase in the demand for medical services of all types. Commonly held opinions in the industry support the estimate that the number of Licensed Vocational Nurses employed in California in 1964 was about ten percent below the need existing at that time. To project the need for future years the need in 1964 rather than the actual employment was used as the benchmark. The need for Licensed Vocational Nurses is expected to grow in proportion to the growth in the medical services field.

A continuation or acceleration of the shortage of registered nurses may result in an increased need for Licensed Vocational Nurses. The shortage of registered nurses may also result in further upgrading of the training and duties of Licensed Vocational Nurses.

The training of persons for this occupation in courses provided under the Manpower Development and Training Act and in other courses should be encouraged to help meet the need in future years. The short duration of the training course—one year—makes it suitable for persons graduating from high school as well as persons re-entering the labor market after an absence of some years.

Most Licensed Vocational Nurses are women, as are most registered nurses. This does not mean that the course is not suitable for males who are interested in the occupation.

Table 15-- Estimated Employment of Licensed Vocational Nurses
In Hospitals and Nursing and Convalescent Homes
California and Selected Areas
1964-1975

Year	California	Standard Metropolitan Statistical Areas				Inyo County
		Los Angeles	Sacramento	San Diego	San Francisco	
1964 actual	11,600	4,100	480	440	2,740	5
1964 needed	12,800	4,500	530	490	3,000	5
1965	13,300	4,800	560	510	3,100	5
1967	14,000	5,000	600	540	3,200	5
1970	15,200	5,500	700	680	3,300	5
1975	17,200	5,900	800	750	3,600	5

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Psychiatric Technician. (DOT 2-42.22 2nd Revision, 355.878 3rd Revision).

A Psychiatric Technician works under the supervision of a physician, psychiatrist, or nurse performing assigned duties in the care, treatment, and rehabilitation of mentally ill or retarded patients. He may carry out a variety of nursing procedures such as administering medications orally or by hypodermic injection; taking and charting temperature, pulse, and respiration; observing patient's condition and behaviour. He is expected, through his knowledge, attitude, and performance, to facilitate the rehabilitation of the patient.

Job preparation:

The majority of psychiatric technicians are employed by large governmental institutions which provide on-the-job training for these workers. A combination of education and/or experience equivalent to completion of the 12th grade is required for entry to the institutional training courses. The training normally lasts one year, but a licensed vocational nurse with recent experience can complete the training in six months. A person may qualify for the examination on completion of a basic pre-service psychiatric technician curriculum accredited by the California Board of Vocational Nurse Examiners.

Future prospects:

Excellent, in spite of an expected decline in the number of State operated mental hospital beds. Present plans call for an increased ratio of employees to patients in most institutions.

The majority of Psychiatric Technicians in California are employees of the California Department of Mental Hygiene. The 1964 and 1975 estimates of employment in this occupation are based upon data provided by that Department, and its estimate of employment by other facilities.

Over the next ten-year period, if current thinking of the Department of Mental Hygiene can be realized, the number of psychiatric technicians employed in State mental hospitals will increase by ten percent, although the number of beds will decrease by 21 percent.

By 1975 a Psychiatric Technician will be required to have a considerably higher level of skill than is now a prerequisite to employment. The California Society of Psychiatric Technicians has been active in upgrading standards for the occupation, and junior college courses designed specifically for these workers have been set up in several communities near large mental hospitals.

The introduction of new methods of treating mental illness requires that the Psychiatric Technician be able to learn new skills and improved ways of handling mental patients. Outpatient clinics in local communities and new types of facilities for the mentally retarded may change the picture of the typical mental patient in that the large State hospital will treat only those who are seriously ill and in need of intensive care, while smaller institutions provide residential care, vocational training, and limited services for those in need of these services rather than actual medical or psychiatric care.

All but two of the State operated hospitals for the mentally ill and mentally retarded are located outside the four population centers for which this study presents information. For this reason, the numbers of Psychiatric Technicians employed in excess of the four Standard Metropolitan Areas included in this study are very low compared to the number of persons employed in other medical service occupations covered by the study.

Table 16--Estimated Employment of Psychiatric Technicians In Hospitals and Nursing and Convalescent Homes California and Selected Areas 1964-1975

Year	California	Standard Metropolitan Statistical Areas				Inyo County
		Los Angeles	Sacramento	San Diego	San Francisco	
1964	12,100	1,500	500	20	77	--
1965	12,300	1,600	500	25	78	--
1967	12,700	1,700	500	40	80	--
1970	13,400	1,800	500	55	83	--
1975	14,300	2,100	600	300	87	--

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Nurse Aid. (DOT Code 2-42.20 2nd Revision, 355.878 3rd Revision.)

The Nurse Aid assists the nursing staff in the care of patients. Works under direct supervision of a registered nurse, of a licensed vocational nurse, or a psychiatric technician. Duties include bathing patients, making beds, and serving food.

Job preparation:

No formal preparation for the job is necessary in most cases. The Aid must be able to read and write. Many hospitals provide on-the-job training including classroom instruction, demonstrations, and practice. A number of Nurse Aids have been trained in courses financed by the Manpower Development and Training Act. The occupation is open to persons 17 years of age and older.

Future prospects:

The continuing shortage of registered nurses and implementation of the nursing team concept has created a demand for workers who can do the less skilled activities necessary for care of a patient.

In 1964 the supply of employed Nurse Aids was in balance with the need. The estimates of need in the projection years were based on a constant proportion of Nurse Aids to total medical services employment.

Nursing and convalescent homes, which grew rapidly in employment during the 1959-1964 period, employed about 8,800 Nurse Aids in 1964, nearly 42 percent of all Nurse Aids in the study. Any acceleration in the growth of this sector of the medical services could cause the need for Nurse Aids to grow more rapidly than the present estimates indicate. Then, too, should state requirements for nursing home licensing be altered, the demand could change--in either direction.

Nurse Aids work under strict supervision of registered nurses or licensed vocational nurses. Duties are limited and repetitive, with one of the redeeming features being the opportunity to work in close contact with the patients during most of the day.

Changes in nursing requirements and upgrading of patient care may require upgrading the skills of the Nurse Aid. This could be accomplished by additional training for the Nurse Aid, or by setting up an occuational classification between Licensed Vocational Nurse and Nurse Aid with higher training and knowledge requirements. A bill to create a classification between licensed vocational nurse and Nurse Aid was introduced in the 1965 session of the California Legislature but failed to pass. The classification was called "Licensed Practical Nurse" and would have required a licensing examination to qualify for the title.

Table 17—Estimated Employment of Nurse Aids In Hospitals and Nursing and Convalescent Homes California and Selected Areas 1964-1975

Year	California	Standard Metropolitan Statistical Areas				Inyo County
		Los Angeles	Sacramento	San Diego	San Francisco	
1964	21,000	7,000	840	990	4,800	5
1965	21,900	7,600	900	1,000	4,900	5
1967	23,000	7,900	1,000	1,100	5,100	5
1970	25,400	8,600	1,100	1,400	5,300	5
1975	28,400	9,300	1,300	1,500	5,800	6

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Orderly.(DOT Code 2-42.10 2nd Revision. 355-878 3rd Revision).

Performs routine duties similar to those of the nurse aid, and often replaces the nurse aid in the men's wards of the hospital. The Orderly may also perform the heavier duties in patient care such as lifting patients, wheeling patients to operating rooms, and moving portable x-ray and oxygen equipment to the patient's bedside. In some hospitals, the Orderly may receive more extensive training than nurse aids to enable him to handle and operate heavy equipment and machinery used in patient care.

Job preparation:

No formal preparation is required for most entry jobs as an Orderly. The hospital will provide on-the-job training and instruction. The Orderly must be able to read and write. The Manpower Development and Training Act has provided some training courses for Orderlies in California.

Future prospects:

Advances in hospital equipment have eliminated many of the heavy lifting chores once performed by Orderlies. In some cases, Orderlies have been able to advance to those technician level occupations which have only limited skill requirements and can be learned by on-the-job training.

Estimates of the need for Orderlies in the years through 1975 are based on a 1964 benchmark which was projected from data in the 1960 Census of Population.[a] Studies of the hospital industry by Area Manpower Analysts of the Department of Employment were taken into account in developing the 1964 benchmark.

Many persons in the hospital field believe that the number of Orderlies will be proportionately smaller in years to come, when compared with total hospital nursing department employment. The estimate of 1970 employment is five percent less than would result from a rate of increase that maintained present relationships to total nursing staff for this reason, and 1975 is ten percent less.

Present employment in the occupation is about in balance with need. A few poorly trained Orderlies may have difficulty in obtaining employment.

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a/ U.S. Department of Commerce, Bureau of the Census. United States Census of Population, 1960. Series PC(1)6D California. Washington, D.C. Tables 120 and 121.

Table 18--Estimated Employment of Orderlies In Hospitals and Nursing and Convalescent Homes California and Selected Areas 1964-1975

Year	California	Standard Metropolitan Statistical Areas				Inyo County
		Los Angeles	Sacramento	San Diego	San Francisco	
1964	9,120	3,200	125	300	1,200	1
1965	9,500	3,500	133	315	1,200	1
1967	10,000	3,600	142	331	1,300	1
1970	10,500	3,700	162	397	1,300	1
1975	11,100	3,800	175	416	1,300	1

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Ward Maid. (DOT Code 2-24.12 2nd Revision. 323.887 3rd Revision).

Cleans and services wards, rooms, baths, laboratories, and offices; cleans, mops, and waxes floors; dusts furniture and equipment. In many hospitals, the Ward Maid is interchangeable with hospital porter. May be assigned to a specific area such as a ward, office, or surgery. Keeps utility storage rooms in good order by cleaning lockers and equipment, arranging supplies, and sweeping and mopping floors. A Ward Maid performs menial tasks in cleaning and maintaining the hospital ward, and does not have direct contact with the patients.

Job preparation:

In most cases, the job does not require any specific training or education. Most hospitals provide some on-the-job training. The Ward Maid must be able to read and write. Employees in this occupation should be able to follow simple directions and recognize the necessity of a high level of cleanliness in the hospital environment.

Future prospects:

The 1964 employment figures for Ward Maid employment is an estimate based on data in the 1960 Census of Population for California.[a] Estimates for future years rest on the assumption that Ward Maids will constitute the same proportion of all medical service employment as in 1964.

The Ward Maid will not be affected by technological change in the foreseeable future. An adequate supply of persons with minimum qualifications willing to accept this type of employment is anticipated.

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[a] U.S. Department of Commerce. Bureau of the Census. United States Census of Population, 1960. Series PC (1) 60 California. Washington D. C. 1962. Tables 120 and 121.

Table 19--Estimated Employment of Ward Maids In Hospitals and Nursing and Convalescent Homes California and Selected Areas 1964-1975

Year	California	Standard Metropolitan Statistical Areas				Inyo County
		Los Angeles	Sacramento	San Diego	San Francisco	
1964	3,500	1,600	102	156	900	1
1965	3,600	1,700	108	164	1,000	1
1967	3,800	1,800	116	172	1,100	1
1970	4,200	2,000	139	218	1,100	1
1975	4,700	2,100	158	240	1,200	1

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Ward Clerk.(DOT Code 1-05.01 2nd Revision, 219.388 3rd Revision).

The Ward Clerk is employed in many hospitals to relieve the nursing staff of a portion of the routine record keeping functions of the hospital ward. The Ward Clerk works under direct supervision of the nurse in charge of a unit. She maintains and accounts for supplies, prepares medical charts for new patients, posts and keeps up-to-date patient files in the unit, and performs a variety of allied duties. She answers the ward phone, and acts as receptionist for the unit.

Registered nurses in a ward without a clerk may spend as much as 20 to 25 percent of their time in routine record keeping; in a ward with four or five registered nurses, this could mean the loss of one nurse per shift from patient care. The Ward Clerk can free registered nurses and allied nursing personnel from a great deal of the routine paper work and allow more nursing care to individual patients. The Ward Clerk cannot free the nursing staff of all clerical duties, but she can do the majority of the "paper shuffling" required to run a hospital ward.

Job preparation:

There is no specialized preparation for this occupation at the present time. The Ward Clerk may be recruited from another section of the hospital, or from outside. The prospective Ward Clerk must be able to type well. A high school business course would also be valuable.

Future prospects:

The present trend of relieving the nursing staff, particularly the registered nurse, of many chores not directly providing patient care should continue, and the position of Ward Clerk will undoubtedly be adopted by additional hospitals. It is difficult, however, to assess the effect that introduction of electronic data processing record keeping systems will have on this occupation. There will always be a certain amount of clerical work attached to patient care which non-nursing personnel can handle.

The number of Ward Clerks in California hospitals and medical services is exceedingly small in comparison with most of the other occupations covered in this study. The occupation has been introduced in hospitals partially as a result of a number of nursing studies made during the late 50's and early 60's. Future employment projections given here are based on estimates of the number of Ward Clerks developed from information in the files of the Bureau of Hospitals, and studies conducted by the Coastal and Southern Area offices of the Department of Employment.

The rather cloudy picture for this occupation reflects the conflict between the growth prospects of an occupation which is just emerging at the very time it could be made obsolete by the introduction of electronic record keeping. It is quite possible that Ward Clerks will be increasingly used in smaller hospitals, while electronic record keeping systems will replace their use (or curtail the expansion of their employment) in larger hospitals.

Table 20-- Estimated Employment of Ward Clerks
In Hospitals and Nursing and Convalescent Homes
California and Selected Areas
1964-1975

Year	California	Standard Metropolitan Statistical Areas				Inyo County
		Los Angeles	Sacramento	San Diego	San Francisco	
1964	2,800	1,200	83	125	550	--
1965	2,900	1,300	88	131	560	--
1967	3,000	1,400	94	138	580	--
1970	3,300	1,500	113	174	600	--
1975	3,700	1,600	129	194	660	--

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Hospital Administrator (DOT Code 0-99.84 2nd Revision, 187.118 3rd Revision).

The Hospital Administrator has overall charge of an institution or a group of institutions. He carries out the policies of the governing board, and coordinates the activities of the medical staff with those of other departments. The Administrator is responsible for the efficient management of the hospital and for seeing that adequate facilities, services, and equipment are available. The Administrator must promote good public relations within the hospital and in the community.

Job preparation:

In some cases, the Administrator is a physician or nurse with management experience. Other Administrators are persons with management experience in another field who have learned hospital administration through on-the-job training. The present trend is to employ persons who have a masters degree in hospital administration. Most graduate programs consist of a year of academic work followed by a year of internship in a hospital. A liberal arts bachelor's degree with courses in business and economics is required for admission to such a graduate program.

Future prospects:

Prospects are excellent for persons trained in this occupation; the present supply of graduates does not meet the demand. As the industry grows a number of trained administrators will be needed for expansion and replacement.

Need for Hospital Administrators was based upon the number of hospitals in California, rather than the number of beds. It was assumed that there was one person in nearly all hospitals and in a small percentage of the nursing homes and convalescent hospitals who was the Administrator. The Assistant Administrator and other employees in the administration division of the hospital were not included in the occupation as covered in this report.

The future need for Hospital Administrators will grow slowly in relation to many of the other hospital occupations. The number in the years for which projections are given will depend upon the growth in the number of hospitals. A change in the average size of new hospitals could cause the number of Administrators needed to vary up or down by 10 percent or more and grouping of hospitals in clusters with one administration could cut the number of persons needed for the top job while expanding the number needed as assistant administrators.

The Administrator of the future will be trained in a variety of general management skills including public relations, organization, and administration, as well as in solving the special problems which are peculiar to the management of a large hospital.

Table 21--Estimated Employment of Hospital Administrators
In Hospitals and Nursing and Convalescent Homes
California and Selected Areas
1964-1975

Year	California	Standard Metropolitan Statistical Areas				Inyo County
		Los Angeles	Sacramento	San Diego	San Francisco	
1964	790	200	37	28	84	2
1965	820	210	39	30	91	2
1967	860	230	42	32	96	2
1970	940	290	47	45	104	2
1975	1,040	300	54	51	119	2

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Medical Technicians (DOT Code 0-50.00-.19 2nd Revision, 078.381 3rd Revision).

Included in this group are Medical Laboratory Assistants, Inhalation Therapy Technicians, X-ray Technicians (radiologic technologists), Electrocardiograph Technicians, Electroencephalograph Technicians, Surgical Technicians, and Scrub Technicians. These employees do not engage in direct patient care, but perform a variety of subprofessional duties which provide services to the patient.

The Medical Laboratory Assistant may take and analyze a patient's blood or make a basal metabolism test; an X-ray Technician operates x-ray equipment and develops film; Electrocardiograph and Electroencephalograph Technicians operate electrocardiograph or electroencephalograph machines to record heart action or brain impulses on a graph which is then interpreted by a physician; an Inhalation Therapy Technician assists in the care of patients with diseases related to the respiratory system. Newer technician fields include those related to equipment only recently coming into use and still quite rare, such as artificial kidneys.

The Surgical Technician and Scrub Technician, fairly new categories, handle duties which are performed by the scrub nurse in most hospitals. The use of these technicians may be limited to a single type of operation.

Job Preparation

A high school education with courses in science and mathematics is a basic requirement for a medical technician. There seems to be a distinct trend for technicians to receive formal training, rather than on-the-job training. The X-Ray Technician may take a 24-month training course at a hospital or medical school; a Laboratory Assistant receives one year of formal training in a medical laboratory; the Electrocardiograph and Electroencephalograph Technicians receive three to six months of on-the-job training.

The Inhalation Therapy Technician needs a nine-month course at an approved school.

The Scrub Technician and Surgical Technician typically receive on-the-job training. In these two cases, hospital orderlies or nurse aides are often trained and upgraded to perform the duties.

Hyperbaric chambers, artificial hearts, kidney dialysis machines, and a host of new machines which are in the early stages of development will probably all require especially trained Technicians to operate and service them. As technology in hospitals becomes more complex, training of existing hospital personnel for many of the Technician jobs will no longer be sufficient. Junior colleges, colleges, and vocational schools will be obliged to offer the types of courses which will enable students to qualify for many Technician jobs.

Future Prospects

As medical technology advances, so will the employment of persons who have been trained to operate machines and equipment which make this advance possible. In the next ten years there will undoubtedly be new machines developed which will require new types of technicians.

The number of Medical Technicians was estimated from the number identified in the 1960 Census of Population for California[a] and then an estimate was prepared for 1964 using data from Bureau of Hospitals and other agencies. The 1964 estimate was used as the base from which to project employment for the years 1965, 1967, 1970, and 1975 based on the projected number of beds in hospitals. Since the number of Technicians will increase at a faster rate than the hospitals will grow, the 1970 estimate was then adjusted upward by ten percent and the 1975 estimate, by 20 percent.

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[a] U.S. Department of Commerce. Bureau of the Census, United States Census of Population, 1960. Series PC(1) 6D California, Washington, D.C. 1962. Tables 120 and 121.

Table 22--Estimated Employment of Medical Technicians In Hospitals and Nursing and Convalescent Homes California and Selected Areas 1964-1975

Year	California	Los Angeles	Sacramento	San Diego	San Francisco	Inyo County
		Standard Metropolitan Statistical Areas				
1964	14,000	5,000	240	580	2,200	4
1965	14,600	5,400	260	600	2,200	4
1967	15,300	5,600	300	600	2,300	4
1970	18,600	6,700	400	900	2,700	4
1975	22,700	8,000	500	1,100	3,200	4

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Medical Records Clerk (DOT Code 1-36.14 2nd Revision, 249.383 3rd Revision)

Assists medical records librarian to maintain files of medical records on patients admitted to a hospital or clinic; codes and indexes the medical records of patients; maintains patient's name index and clinical record files; prepares periodic and special statistical reports.

Job preparation:

High school graduation with good clerical skills is required. On-the-job training provides the Medical Records Clerk with an opportunity to learn medical terminology and the scope of the health field. A new classification, Medical Records Technician (DOT 1-36.14) requires nine to twelve months of training in an approved junior college or hospital school. The medical records technician category is the result of two influences--a shortage of medical records librarians, and a desire to upgrade the Medical Records Clerk through a standardized training program. On-the-job training of Medical Records Clerks varies from institution to institution, as do the duties.

Future prospects:

During the next few years the number of medical records clerks will probably increase as the number of hospitals grow. Introduction of electronic data processing systems for hospital record keeping may limit the expansion of employment in the occupation and may also require a higher level of skill for the nonprofessional working in a hospital medical records library, but it is not certain how rapidly this will occur.

The benchmark for Medical Records Clerks was estimated from the number of medical records librarians found by surveys made in 1964 by the Coastal and Southern Area offices of the Department of Employment. Projections for the years 1965, 1967, 1970, and 1975 are based upon the estimates of beds and employment prepared for those years.

The Medical Records Clerk (in many hospitals) will probably have to learn new skills in the period 1965-1975. If the electronic data processing systems now in existence and under development gain widespread acceptance by the industry, the clerk may have to learn new duties and new methods of handling and filing the output of machines, in place of the present duties handling hand posted and filed records. The quality of records will necessarily be of a higher order.

Medical research is a constantly growing area in hospitals. The medical records library is often the foundation of the medical researchers study and without adequate records which are easily accessible a study may flounder. For this reason the Medical Records Clerk (or perhaps Medical Records Technician) must be trained to know and use medical terminology, classification of diseases, and filing systems. She must be able to interpret the notes of the various persons concerned with the treatment of individual patients.

**Table 23--Estimated Employment of Medical Records Clerks
In Hospitals and Nursing and Convalescent Homes
California and Selected Areas
1964-1975**

Year	California	Standard Metropolitan Statistical Areas				Inyo County
		Los Angeles	Sacramento	San Diego	San Francisco	
1964	900	400	35	40	150	1
1965	900	430	37	42	153	1
1967	1,000	450	40	44	159	1
1970	1,100	490	48	56	164	1
1975	1,200	530	54	62	180	1

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

Insurance Clerk (DOT Code 1-01.47 2nd Revision, 219.388 3rd Revision)

The insurance clerk employed by a hospital verifies hospitalization insurance coverage of patients, types insurance forms, and computes total hospital bills showing amount to be paid by insurance companies. Larger hospitals may hire one or more persons to work full time as insurance clerks while in a smaller hospital the work is often combined with other accounting and clerical duties and may not be identified as a separate occupational classification.

Job preparation:

Important to this occupation are good clerical skills including typing ability and an aptitude for figures. Knowledge of medical terminology is also useful. On-the-job training is usually provided by the employer.

Future prospects:

Medicare and expanded health insurance coverage for the general population will increase the amount of paper work required to process the necessary forms to collect the amount due for services to a patient. This increase in the volune and complexity of insurance processing will undoubtedly accelerate growth of the number of insurance clerks employed by medical service establishments.

Estimates of the number of insurance clerks employed in 1964 were based upon data developed by the Coastal and Southern Area Offices at the Department of Employment. Using 1964 for a benchmark, employment was projected to exceed employment growth for the medical service industry by five percent in 1967, 15 percent in 1970 and 25 percent in 1975.

Table 24--Estimated Employment of Insurance Clerks In Hospitals and Nursing and Convalescent Homes California and Selected Areas 1964-1975

Year	California	Standard Metropolitan Statistical Areas Los Angeles	Sacramento	San Diego	San Francisco	Inyo County
1964	1,100	430	15	40	120	--
1965	1,100	460	16	42	122	--
1967	1,300	500	18	46	133	--
1970	1,500	600	23	64	152	--
1975	1,900	710	29	78	180	--

Note: Projections do not yield exact figures, but it does not seem appropriate to round off figures of tiny magnitude merely to ensure that they are taken as approximations.

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